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ABSTRACT

The author summarizes and reviews seven research studies which seek to determine the role of individual modal preference as related to learning to read. The seven studies are by Bateman (1968); Robinson (1968); Jones (1970); Bruininks (1968); Cripe (1966); de Hirsh, Jansky, and Langford (1966); and Bursuk (1971). Of these studies, only Bursuk firmly supports the theory that the modal preference of an individual should be considered in teaching him to read. All seven studies concentrate on studying visual and auditory modalities. The author feels that it would be extremely difficult to find an approach for teaching which would eliminate almost entirely the role of either the visual or auditory mode. A second problem he mentions is the identification of modal preference--for this purpose a modal preference test considering both the conceptual and the perceptual aspects of learning should be developed. He concludes that more experimentation is needed to assure the testing of modal preference and its relationship to learning. References are included. (AW)

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Learning Modalities--Should They Be Considered?

Providing each child with the most effective and efficient reading instruction possible has been, and remains, the ultimate goal of professionals in the field of reading. Individual needs and abilities should be the bases for determining such instruction. In order to provide for pupil differences, additional knowledge of perceptual and cognitive functions and of their relationships to reading achievement is required. Researchers investigating these functions must necessarily consider the development and contributions of the various sensory channels or learning modes as they relate to reading.

Previous Summaries of Modal Preference Research

Research concerned with modal preference as related to learning has been conducted consistently since the latter part of the nineteenth century. Most of this research has been summarized in one or more of the following compendia: Henmon (1912), Day & Beach (1950), McGeoch &

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Irion (1952), Witty & Sizemore (1958, 1959a, 1959b), and Jones (1970).

The number of modal preference studies found in these reviews is large. However, the purpose of most of these studies was the comparison of listening and reading as input channels for the comprehension of verbal and printed materials or the learning of lists of words or nonsense syllables by groups. In these studies, the factor of individual differences has been seen less as a point for research than as an annoying variable accounting for many of the conflicting findings of modality research. Consequently, only a few studies have made an effort to determine the role of individual modal preferences in learning and fewer still have been concerned with learning to read (Jones, 1970).

Individual Modal Preference as a Factor in Learning to Read

Bateman (1968) sought to explore the relative effectiveness of visual and auditory approaches in teaching beginning reading. The sample consisted of 182 children in eight kindergarten classes. All of the classes received the Detroit Group Intelligence Scale and the Metropolitan Reading Readiness Test. The Illinois Test of Psycholinquistic Abilities (ITPA) was administered to four of the classes in order to divide them into auditory and visual preference groups. In the first grade, half of the auditory subjects were taught with an auditory method and the other half with a visual method. The same procedure was followed in assigning the two visual classes and the four non-placement classes which did not receive the ITPA. The visual method employed Scott, Foresman materials and the auditory method used Lippincott materials. Analysis of variance was used in the statistical

treatment.

The auditory method produced superior reading and spelling achievement when compared with the visual method. The subjects labeled as auditory learners made significantly greater gains than did the subjects labeled as visual learners. A significant interaction between modal preference and instructional method was not found.

However, two major weaknesses make the results of this study suspect. First, the Scott, Foresman and Lippincott materials used in the study are not distinctly visual or auditory in nature. Second, many, if not a majority, of the children in the visual group actually scored higher on the auditory memory subtest of the ITPA than on the visual memory subtest of that same test--up to nine months. The probability that fifty percent of all incoming first graders prefer the visual mode and fifty percent prefer the auditory mode is very small. But this is exactly what the researcher assumed in assigning subjects to auditory and visual learning groups.

In another experiment employing approaches stressing different modalities of learning, Robinson (1968) categorized 448 first grade pupils as either high visual-high auditory, low visual-low auditory, high visual-low auditory, or low visual-high auditory on the basis of their performance on three visual discrimination tests and Wepman's auditory discrimination test. Sight (basal reader) and phonic (Hay-Wingo) approaches were used. No significant differences were found between those pupils in the high visual-high auditory, high visual-low auditory, or low visual-low auditory groups on the reading sections of the Metropolitan Achievement Tests and the Gray Oral Reading Test. Subjects in the low visual-high auditory group taught by the phonic

method demonstrated greater silent reading achievement at the end of first grade using the .06 level of significance. This study appears to have been well planned and executed with the only apparent weakness lying in the classification of the basal reading program as a strictly sight approach.

A study by Jones (1970) examined the relationships among intersensory transfer, intersensory perceptual shifting, modal preference, reading achievement, and intelligence using 153 third grade pupils. Auditory and visual labeling tasks were constructed which required the subjects to learn strange auditory labels (using nonsense syllables) and strange visual labels (using McKee's alphabet) for pictures of concrete objects. The direction and extent of modal preference was obtained by subtracting the score on the visual task from the score on the auditory task. The modal preference score did not correlate significantly with any of the other perceptual measures, size of sight vocabulary, or reading comprehension as measured by the Metropolitan Reading Test. The part of the study dealing with modal preference was weak, however, due to the strong ceiling effect of the modal preference test. Perfect scores were recorded by 25 percent of the subjects on the auditory labeling test and 22 percent on the visual labeling test.

The primary purpose of Bruininks' (1968) dissertation was to determine whether subjects who show a preference for either the auditory or the visual mode also show a preference for certain methods of learning unknown words. One hundred five Negro boys from the second and third grades were administered a battery of six auditory and six visual perception tests. An equal number of subjects (20

in each group) showing the strongest preference based on differential performance on the auditory and visual tasks were assigned to an auditory or visual preference group. An attempt was then made to teach each subject in both groups to recognize 15 unknown words using a "look-say" approach and 15 unknown words using a phonic approach in two separate lessons of twenty-three minutes duration each. Immediate learning and delayed recall (after one week) were tested. Analysis of variance was employed to analyze the scores of the two preference groups. Neither of the groups demonstrated a preference for either method of teaching new words. A serious limitation of this study is the misclassification and employment of the Birch and Belmont test as one of the auditory perceptual tasks, since it involves visual perception and intersensory association in addition to auditory perception.

The decoding and association subtests of the Illinois Test of Psycholinguistic Abilities were used by Cripe (1966) to find 18 first graders who preferred the auditory mode and 18 first graders who preferred the visual mode. The subjects were administered tasks involving auditory and visual stimuli, both linguistic and nonlinguistic in nature. The two groups did not differ significantly in their rate of learning on the tasks. Cripe concluded that either the Illinois Test of Psycholinguistic Abilities does not successfully measure modal preference or the test measures differences which are extremely subtle.

In another study, de Hirsch, Jansky, & Langford (1966) administered four tests of auditory perception (Imitation of Tapped Patterns,

Auditory Discrimination, Language Comprehension, and the Gates Rhyming Test) and four tests of visual perception (Bender Visual Motor Gestalt, Horst, Gates Matching, and Word Recognition tests) to 53 kindergarten children. Ten of the 53 subjects demonstrated a strong modal preference--seven performed significantly better on the auditory tests than on the visual and three performed significantly better on the visual tests than on the auditory. The three subjects preferring the visual mode and five of the subjects preferring the auditory mode passed all of the reading tests administered to them at the end of the second grade. The other two subjects preferring the auditory mode failed all of the reading tests. Conclusions concerning the reading success or failure of these subjects cannot be drawn because no controls for methodology or teacher variables were employed.

The purpose of Bursuk's (1971) experiment was to determine if sensory mode of lesson presentation was a factor in the improvement of reading comprehension of adolescent retarded readers. A group of 132 tenth grade students of average intelligence whose reading levels were one or more years below grade level were administered the Sequential Tests of Educational Progress (STEP), Reading Test, Form 2A and Listening Test, Form 2A. The results of these two tests were used to classify students as either auditory learners, visual learners, or learners with no sensory preference. After identifying the students as to their learning preference, if any, 30 pupils were randomly selected from each classification yielding a final sample of 30 auditory learners, 30 visual learners, and 30 learners with no preference. Fifteen of the students in each of the three groups were assigned to a

combined aural-visual approach and an equal number was assigned to a predominantly visual approach.

The groups met for reading instruction for forty-five minutes three times each week for a semester. The group receiving the combined aural-visual treatment worked on comprehension through listening for two sessions each week and through reading for one session each week. The group receiving the visual treatment worked on comprehension through reading lessons only.

The California Reading Test, Advanced Level, Form X was used to determine the amount of gain in reading comprehension. Using the .05 level of significance, the combined aural-visual approach proved to be more effective than the visual approach in improving the reading comprehension of the subjects. In addition, a significant interaction was found between the mode of lesson presentation and the modal preference of the learners. Auditory learners and learners with no modal preference made significantly greater improvement in reading comprehension than did the visual learners when the combined aural-visual approach was used. When the visual approach was used, the gains of the visual learners were significantly greater than those of either the auditory learners or learners with no preference.

Some Summary Comments

Of the seven studies reviewed, only one, Bursuk (1971), firmly supported the theory that the modal preference of an individual should be considered in teaching him to read. One striking feature of this study is that both the method used to determine modal preference and the learning task were conceptual in nature. This seems to

support Wepman's (1971) statement that if a preference exists it is "... more readily discernible at the higher meaningful level of conceptual and symbolic thought (p.6)."

This study also differed significantly from the others with regard to the sample. The subjects in the sample, even though considered as retarded readers, still read well enough to allow the experimenter to determine if they comprehended differentially with a visual or an auditory input. In other words, the reading ability of the subjects permitted the use of a test of modal preference and a learning task which were conceptually oriented.

Finding an approach for teaching visual decoding skills which eliminates almost entirely the role of either the visual or auditory mode is extremely difficult. Certainly none of the existing basal programs on the market can be labeled either as visual or auditory, though some may be said to stress the auditory mode or the visual mode more than others.

An additional problem in the consideration of modal preference is the identification of the preference. At least four of the studies reviewed here revealed weaknesses in terms of the identification of modal preference. High on the list of priorities, then, should be the development of a modal preference test. Quite likely, such a test would need to consider the conceptual as well as the perceptual aspects of learning. A valid test of modal preference would also do much to strengthen the research in this area.

Little has been said in this paper concerning the kinesthetic and tactile modes in learning to read. The Fernald technique has been

shown to be quite successful in teaching retarded readers (Fernald, 1945). Children who learn to read through this approach after conventional methods have failed may not necessarily prefer the kinesthetic or tactile mode to the visual and/or auditory modes. Ofman and Shaevitz (1963) argued convincingly from their research findings that the important variable in the Fernald technique is the forced visual attention required in tracing--not the kinesthetic and tactile clues.

At this time, no one can say to the teacher or the clinician with assurance, "Use this test to determine if the learner has a preferred mode and if you find that he prefers a particular mode, then use these materials to teach him to read." More experimentation is needed before this is possible, if at all. The areas of modal preference and the related areas of intersensory transfer and intersensory perceptual shifting do offer the researcher promising grounds for further investigation of how humans learn to read and think.

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